This PDF includes cropped and composited scans, there are also two versions of this document, one with lower quality images as to improve optimization. Both of the PDFs along with the full and original scans can be found at:

https://archive.org/details/hydreco

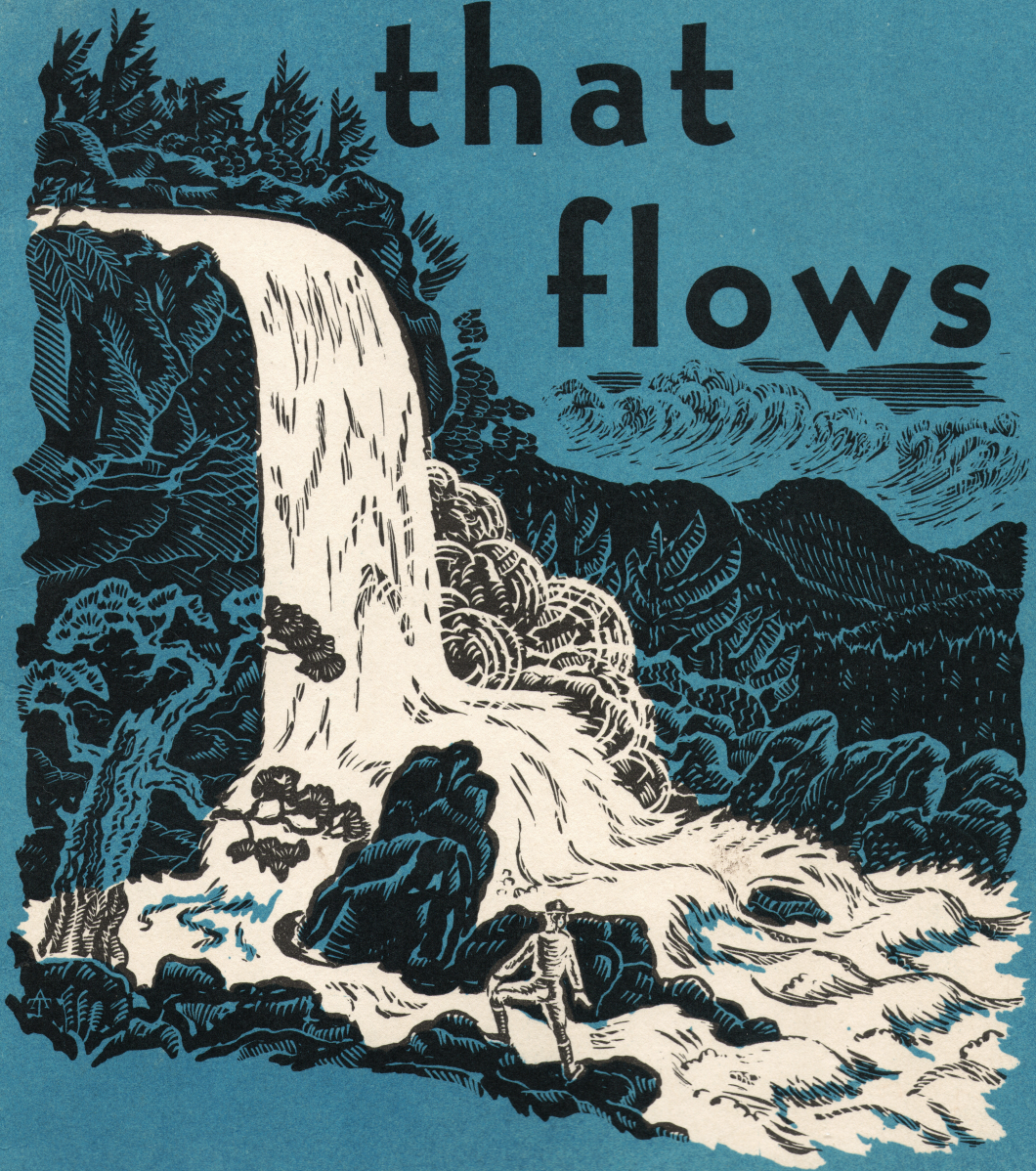
-TalkingFish

BELOW: A card included between pages 2 and 3 directed towards the original receiver of this booklet, whoever he may be.

We are sending you this Booklet, thinking that it may be of some interest to those friends outside our organization who have played so important a part in our development.

HYDRAULIC EQUIPMENT CO.

power that flows



the story of

HYDRECO

written at passing the tenth milestone

— power that flows —

Incorporated 1936

HYDRAULIC EQUIPMENT COMPANY
CLEVELAND, OHIO

THE story of one company's growth in the making of hydraulic systems. Its work in the harnessing of the mysterious forces of nature for the good of man. The power that enables the unfolding fronds of the fern to displace a heavy stone on the forest floor, and the power that activates the factory lift truck are essentially the same. It is the moving strength of liquids under pressure in an enclosed system, the walls of plant cells or man-made machinery.

— power that flows —

PLANT AND OFFICES
1100 EAST 222 STREET

LEFT: Hydreco's first plant on this site. Erected summer 1936. This view was taken in 1940 and includes the additions to the rear which doubled its original size.

THE STORY OF HYDRECO

TEN YEARS OF PROGRESS in HYDRAULICS

The incorporation of Hydraulic Equipment Company on January 6, 1936, was something more than the starting of a new enterprise. It was putting to actual test an idea of one of the founders. This idea was that a business could be operated successfully on a foundation of consideration toward those working for it and toward its customers. It was believed that guiding rather than demanding, of attempting to have the reasons for a decision understood as well as the decision itself, would promote an atmosphere in which individuals would like to work and so produce their best. As applied to its customers, this principle meant studying individual requirements and supplying the items best suited to each specific application, even though this frequently meant designing and making special units for a customer. Even today, practically all cylinders and many pumps and valves are made only for the customer for whom they were designed.

The first few months of the corporation's life were spent in rented quarters, where it had a small room for an office and a few square feet of shop space where its products were assembled and tested. Substantially all of the machining of parts was done in outside job shops, although a little work was done at night, by special arrangement with the landlord, on machine tools he used in the day time. During this period it was the rule rather than the exception for the principals to put in a full day in the office and then a good part of the night in the shop.

Within a few months it became obvious that more space was a necessity. After considering a number of possible solutions, a small lot was purchased, which is part of the present property on East 222nd Street; and the first unit of the building, only 75 feet across the front and 60 feet deep, was erected. Of this building, which was completed in September, 1936, about one-fourth was partitioned off as office space and a large part of that was devoted to the engineering department, which from the first has been a major feature of the business. In the entering of its new home, the company was able to realize one more of its original plans, to take over the machining of the most critical component parts of its products. This marked a new era, for it was possible to exercise to an even greater extent, control over the finished product. It also accounted for the first major increase in personnel.

During the early days in the new building it was customary for the entire office force to eat lunch together in a restaurant near the Euclid Branch Post Office. The incoming mail would be collected and then opened and thoroughly discussed during the lunch hour. All knew the situation on unfilled orders and shipments and all were keenly interested. On the last day

— power that flows —

of that first year, December 31, 1936, everyone waited until the last shipment was made, invoiced and posted, so they could know the total shipments before going home. The final figure was ample cause for a New Year's celebration, an amount which now is less than is normally expected for two weeks' production.

The annual Christmas party was inaugurated that first year, but it differed in many respects from the parties now held. At noon on the day before Christmas, space was cleared in the engineering department and tables were moved together to make an imposing board on which to spread the banquet. Members of the organization brought the various items of food from their homes and everyone had a thoroughly good time.

Orders in those days were for quantities which today would seem small. The customers' requirements were small, either because they were themselves small concerns, or they were only beginning to use hydraulic controls on their products. In many cases Hydraulic Equipment Company helped the customer design his product for the application of this efficient means of transmitting power, with which he had no previous experience. Also, the customers at times expressed a desire for characteristics not previously considered important in a unit. One such request was from a lift truck manufacturer for a control valve with finer throttling characteristics than were provided in any valve known. Careful application to this problem resulted in the development of the hollow plunger valve, which may have played some small part in that customer's phenomenal growth, and has broadened the field of hydraulic applications.

The past ten years has been a period of perennial struggle to increase production in cramped space. Mere size either in volume of business or plant area has never been considered by the company to be a worthy goal, but the demands of its customers have necessitated continued expansion. The plant was doubled in 1939, and further additions were made in 1941, 1942, and 1944; and during this period the land occupied was multiplied more than five times.

The first month the company occupied its own building, the entire organization was made up of 31 individuals. Eleven of these still remained and were the charter members of the Hydreco Old Timers when that organization was formed in 1946. All of these old timers whose pictures appear later in this book have worked up to supervisory positions of responsibility and skill. It has been the policy of the company, wherever possible, to advance persons already in its employ to fill vacancies or new positions made necessary as it grew to an organization of 350 people.

The growing concern was unable to pioneer in employee benefits, but it was one of the early members of the Cleveland Hospital Service Association, making available to its employees insurance for hospital services for themselves and their families. This service was greeted with enthusiasm and was followed by the installation of a group life and health insurance system. The friendly spirit in the organization has quite naturally given rise to summer picnics attended by employees' entire families. This is an all day event, with special games and contests for the children. The Christmas party, on the other hand, has evolved into an evening affair,

primarily for the employees, their wives and husbands. The bowling leagues create a great deal of interest throughout the winter, one made up of girls of the organization and the other for the men. Both are exceedingly well attended. The Hydreco soft ball team in the summer has recently given an especially good account of itself. Against strong competition, including teams from companies employing several thousand people, it was runner-up in the Euclid Industrial League in the 1946 season.

Each new month brings a copy of the "HYDRECO PUMP" to every member of the organization. This employee publication, composed and printed at the plant, features plant news, personal anecdotes, and educational write-ups. A staff of shop and office reporters distributed throughout the company gathers news and information for the paper.

In line with the trend of the times, the shop was unionized by C.I.O. in 1941. Meetings between the shop committee and the management have resulted in a better understanding of each other's problems and an honest effort to reach equitable solutions to the comparatively few questions which arise. It is the earnest desire of every one to make Hydreco a better place to work and Hydreco products the best in their field. In cooperation with the Union, a production incentive system was installed in 1943, in which all shop employees participate, those in the indirect classification as well as those performing direct work on the products. This meant a very considerable increase in take home pay for the employees and increased production to assist the management in holding costs and prices down.

At the present time Hydraulic Equipment Company stands squarely on the threshold of the future. Although looking back is pleasant, there is no feeling of longing for the "good old days." There is only merit in meeting the issues of the times boldly with the feeling of confidence that comes from accomplishments in the past and determination to give our best efforts to the future.

In presenting these brief glimpses of its history, Hydreco is not unmindful of the important part played by its customers; by its former employees who gave their best during their period of association with the company; and also those outside the organization, who have helped by supplying materials, parts and services. To our customers we say: "Many thanks for your past orders and the consideration shown us. Your helpfulness has at times far exceeded that normally to be expected. You have made our ten years of progress possible." To our vendors we say: "Many thanks for the services you have rendered. Without them we could have done nothing."

— power that flows —

HYDRECO'S
FAMILY ALBUM

On the following page we present the charter members of the Hydreco Old Timers Club. This organization is composed of persons who on October, 1946, had been with the company for at least ten years. New members will be initiated into the club annually, and any employee who completes ten years of uninterrupted service with Hydreco will be eligible for membership.

The present membership as shown on the following page, comprises, with the exception of a few who have left in the intervening years, the

original staff of Hydraulic Equipment Company. These veterans of Hydreco service have seen the company grow from its inception to its present size and capacity. The early struggles of the company were almost entirely the struggles of these individuals. The success of Hydreco is their success. Hydraulic Equipment Company as it now stands is one stage in the fulfillment of the vision of these people. The following stages are in the future.

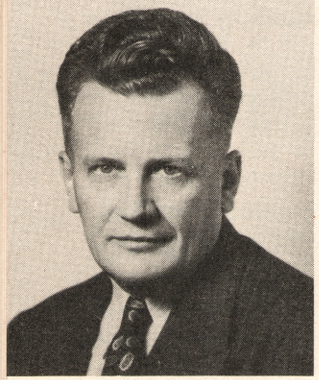
The purpose of this organization is to recognize the efforts and achievements of those who work and grow with the company over a period of years. It also provides a bond of mutual recognition between the members themselves, who have spent these years working together. It fosters one more bond of common interest between them, and enables them to look to the future together.

CHARTER MEMBERS

HYDRECO OLD TIMERS CLUB

HAROLD ARNOLD

ARLINE BUSCH YOUNG

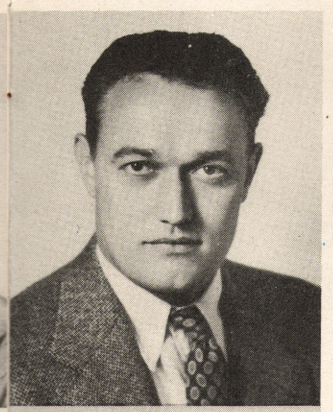


WILLIAM C. DOLCH

PETE BESEDNIK

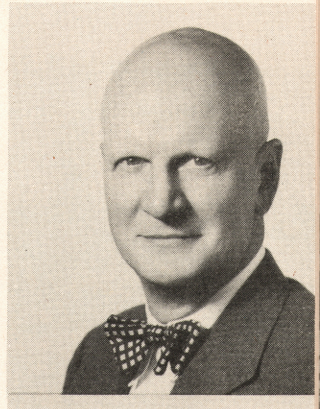
LAWRENCE M. COLLINS

EDWARD J. HRDLICKA



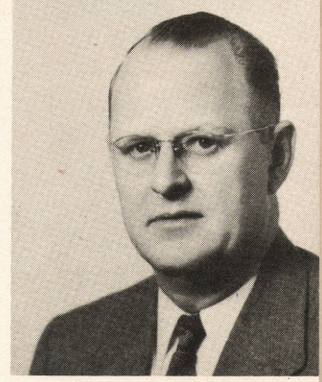
JOSEPH POGACAR

MARIE SKOV

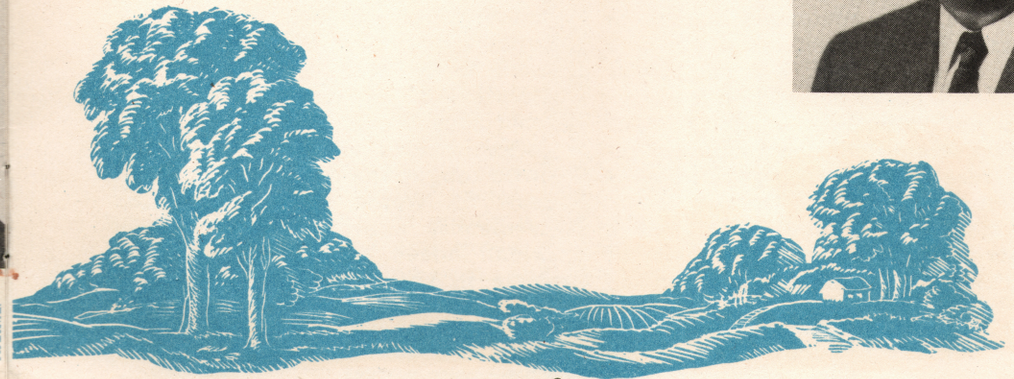


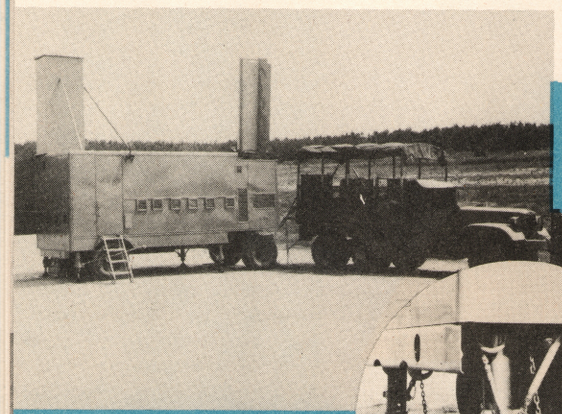
HALL KIRKHAM

NICK SCHNEIDER



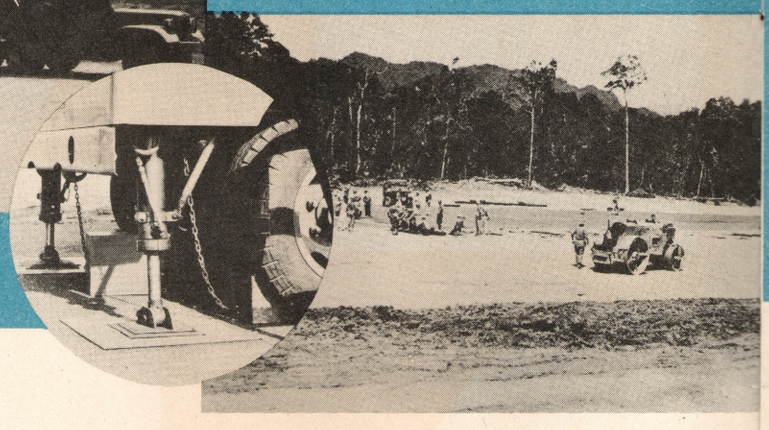
WILLIAM J. YOUNG





RIGHT: Lift truck built by Hyster Company to facilitate changing of aircraft motors at U. S. Naval Air Base.

BELOW: Austin-Western Cadet Roller working on an airport strip on Bougainville Island (Solomon Group).



ABOVE: Bendix Radio Division's GCA trailer unit complete. Inset shows close-up of built-in hydraulic jacks.

AS in the case of nearly all of America's industrial organizations, Hydraulic Equipment Company was profoundly influenced by World War II. The actual design, distribution and end use of Hydreco products were not affected greatly, as is evidenced by the fact that little reconversion was necessitated at the conclusion of hostilities. To a large extent Hydreco Hydraulic Systems and components are being manufactured for the same type of installation and also, in most cases, for the same customers now as in wartime. However, the needs of a nation and of half a world at war placed a heavy demand on the company's productive capacity. The great strain upon the manpower resources of the nation gave impetus to the trend toward the use of machinery and equipment designed to increase the productive capacity of labor, especially in construction and materials handling. In consequence, all of the output of the young corporation was desperately needed, but the ceiling of production was determined, of course, by the amount of materials that were allocated by the government for Hydreco's purposes.

In presenting this story of Hydraulic Equipment Company's part in the war, we at Hydreco have no intention of inflating ourselves upon our help to the country, or of making comparisons with other's efforts, or of causing such comparisons to be made. The tremendous losses suffered, and the crushing sacrifices made, by persons and organizations all over the world, who fought the good fight, as they saw fit, would make any inconveniences experienced here seem small indeed. Our accomplishments pale in the light of the achievements of our great country. We humbly wish we could have done more. We only wish to recall the experiences to refresh our memory and to present the facts, in a small outline, to all who may be interested.

BACK IN CIVVIES, Hydreco pauses for a modest glance at her record in the great war just over — the effects of which are still the dominant influence in the affairs of this battered old planet.

BELOW: Baker-Raulang lift truck specially designed to handle high explosive shells.

HYDRECO UP FRONT

One of the more interesting uses of Hydreco devices, from a technological standpoint, although it did not require any large percentage of our production, was in leveling devices for radar equipment. This equipment, manufactured by Bendix Radio, is a blind landing system which locates all aircraft within a radius of thirty miles and guides them along a safe landing path. It is in the form of a large trailer that can be moved about freely. We quote here from a letter that we were very pleased to receive from Bendix Radio Division. "The trailer with equipment weighs approximately 21,800 pounds. To obtain the extreme accuracy that is necessary, it is essential that the trailer, when set up alongside a runway, be level from front to rear, but that the starboard side be higher than port to give a two degree tilt from horizontal in the direction of the approaching aircraft. Final positioning is accomplished with your equipment. Four power-driven hydraulic jacks are permanently attached at the underside corners of the trailer. By means of a reversing valve and four cut-off valves, it is possible to raise or lower any corner of the trailer to obtain the required tilt and to

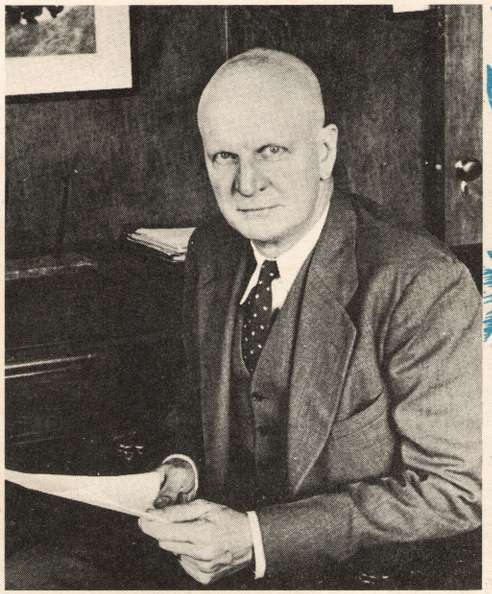
(continued on page 14)

HYDRAULIC EQUIPMENT COMPANY

OFFICERS

DIRECTORS And DIVISION HEADS

CARTER KISSELL
ASSISTANT SECRETARY
DIRECTOR



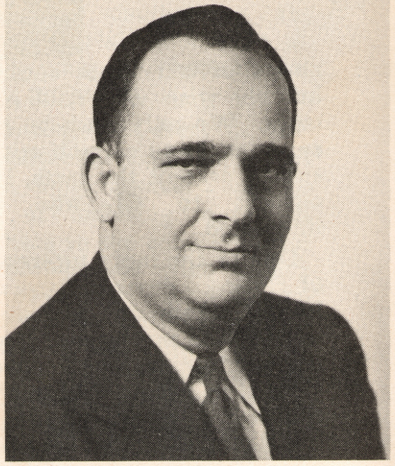
HALL KIRKHAM
PRESIDENT
DIRECTOR

HAROLD J. ZIMMERMAN
VICE-PRESIDENT
DIRECTOR

ARLINE BUSCH YOUNG
SECRETARY
(Retired November 15, 1946)

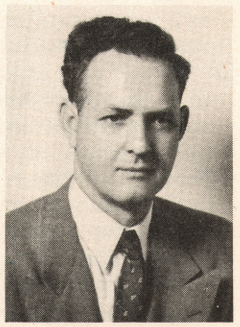
HERBERT P. LADDS
DIRECTOR

HELEN M. NELSON
ASSISTANT SECRETARY



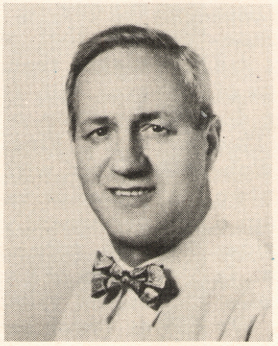
ROY W. SWISHER
SECRETARY-TREASURER
DIRECTOR

K. Z. MORLOCK
PERSONNEL MANAGER

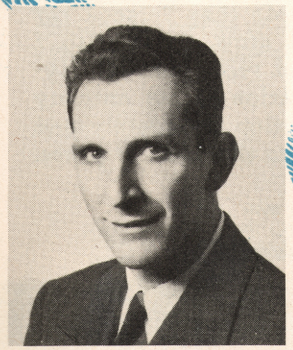


J. L. BAKER
CHIEF INSPECTOR

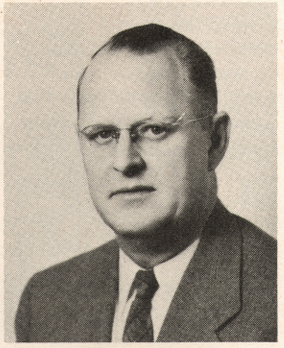
A. E. McBRIDE
SUPERINTENDENT



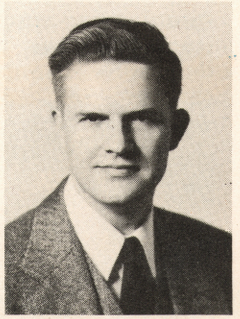
C. F. RAYMENT
SALES MANAGER



E. J. HRDLICKA
CHIEF ENGINEER



WILLIAM J. YOUNG
MANAGER OF PRODUCTION
AND PURCHASING



T. I. ADAMS
SALES PROMOTION
MANAGER

compensate for any unevenness of the terrain. Since any variation from the prescribed position would seriously interfere with the accuracy of the equipment, your jacks and hydraulic system were important in obtaining the excellent performance with which GCA (Ground Controlled Approach) is credited." This is one of the many uses of Hydreco devices which, due to the security requirements of the government, were a secret to nearly all of the persons who were active in producing them.

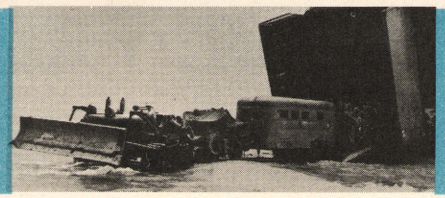
The end use that required the greatest portion of the company's output was in materials handling, including such equipment as lift trucks and carriers. Whereas standard equipment was used in factories country-wide, to help everywhere in expediting the movement of goods at a tremendous saving in time and manpower, many special devices were developed to load and unload ships, handle explosives etc. Factory trucks for the handling of explosives provided an opportunity for Hydreco Hydraulic Systems to be used at their greatest efficiency. These supplied a trustworthy adaptation of power that was smooth and shockless, exactly in line with the demands of safety. Many of the company's units also went into special carriers adapted to unloading supplies and ammunition on beaches. These devices can be pictured running right out into the surf, into comparatively deep water, and picking up a staggering load, quickly carrying it to the land. Speed and dependability were indispensable here, where the lives of many depended upon work to be accomplished in moments.

Wherever construction work was carried on, whether in training camps and bases at home or across the water, there one might find the machines that have revolutionized this work and many of these machines were Hydreco equipped. Hydreco hydraulic systems were used all over the world in the development and maintenance of airfields and roads. In this work they performed principally as integral parts of scrapers, rollers, dirt carriers and bulldozers.

Not all of the contribution to the war effort by Hydreco personnel was in the line of company duty. As in all plants, most of the young men were needed elsewhere, to be geared to the grim hard tasks that only they could accomplish, leaving their places at desk and machine to be filled by the very young, the older and of course, to the opposite sex. Hydreco's service flag carries 79 stars, two of which are gold. Of those who left Hydreco for the armed services, approximately fifty percent have returned to take up peacetime duties and all who wished to return have been welcomed back to positions as good or better than those they forsook for the calling of arms. It is with a great feeling of relief that the Hydreco organization in its entirety turns its attention completely and happily again to the tasks of peace.

BELOW: Bucyrus-Erie bulldozer. Picture on left shows bulldozer at work clearing rubble in an occupied city.

RIGHT: Bulldozer is first ashore from L.S.T. in landing operation.



HYDRECO SYSTEMS ON THE JOB

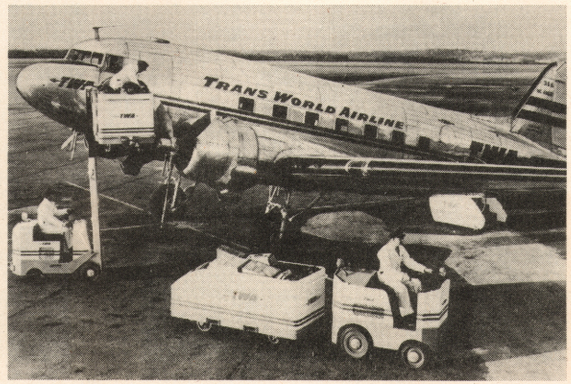
When Hydreco manufactured products leave our shipping dock our contribution to the society, the *economy,* of which we are all a part is not yet accomplished; just the part over which we have direct control. The truly beneficial result of the hours we spend at desk and machine comes later. For these hours of work we at Hydreco, by the use of money as an exchange medium, receive the benefits of others' specialized work.

The real benefit of Hydreco to the national economy is brought about in the actual moving of earth, handling of materials, or production of raw materials or finished parts by our customer's customer. It is only in his, the actual consumers' work that our efforts have their real justification. It is interesting to consider that almost none of Hydreco's products go direct to the actual user. It is by working with manufacturers of machinery, who incorporate our devices into their product, that our contribution to the wealth of the nation and to the world is launched. Hydreco engineers often assist manufacturers in the actual design of equipment in which our devices are to be applied. This work entails designing the movable working unit to be actuated by hydraulic means; determining the course of the flow of power; the nature of the power take-off, or primary power source; the location and nature of the operator's controls; and usually, other considerations as well. This cooperative working with producers of equipment by our sales and engineering departments is one of the most important aspects of our work.

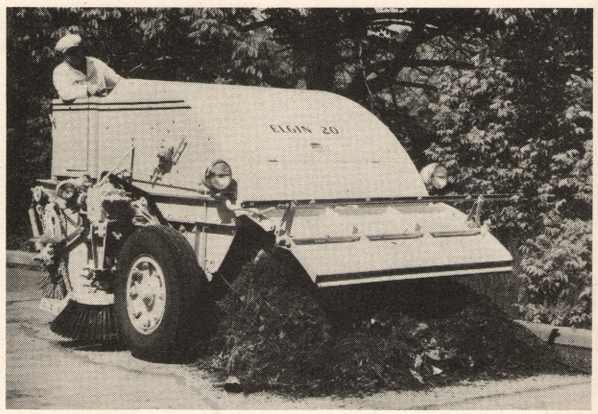
It is with intense interest that we at Hydreco study the results of our working together with our customers, which is embodied in the diverse and versatile machines that are produced. The competence and accomplishments of these machines in the performance of their intended work is the most important result of our endeavors.

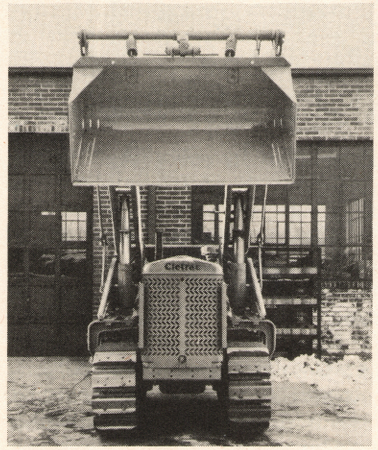
In outlining the wide variety of machines into which Hydreco Hydraulic Systems or components have been incorporated, let us start with those which might best come under

Towmotor lift truck used by TWA in rapid mail and baggage transfer. The fork truck lifts the trailer unit up to working level, keeping handling of freight down to a minimum.



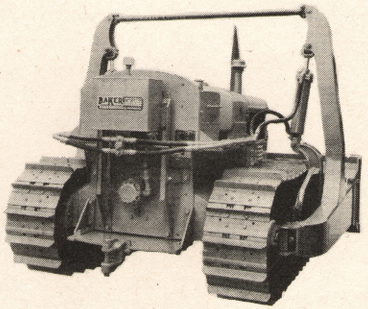
RIGHT: Elgin Sweeper at work, discharging refuse picked up from streets. Modern hydraulic equipped street cleaning machinery spruces up cities and towns, lightens taxpayer's load.





ABOVE: Oliver Corporation's Cletrac Front-End Loader. Note telescopic hoists.

INSET (Right): Baker bulldozer. This rear view shows how the pump is mounted on this rugged earth-mover.

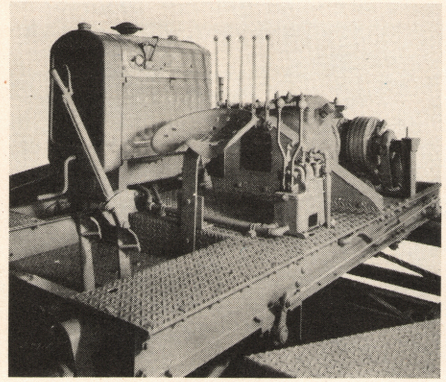


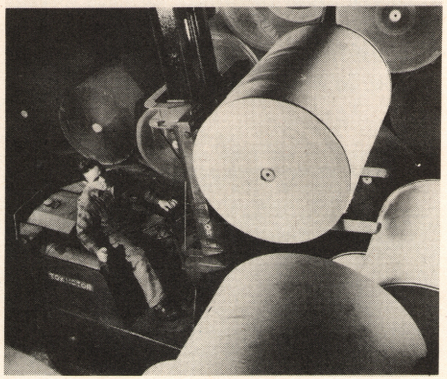
the heading of materials handling. These consist of elevators, lift trucks and straddle trucks.

Considering next the many devices that are used as auxilliary attachments to tractors of various kinds to enable them to perform special tasks, we must mention bulldozers, scrapers, loaders and mowers. Special attachments for motor trucks include snow plows, under body scrapers and special devices for loading, hauling and unloading.

The following devices in which Hydreco controls are employed might best be classified under the caption of contractors machinery and equipment; road graders, road rollers, concrete and asphalt paving machines, ditching machines, trailer dump units, and the versatile Warner and Swasey Gradall.

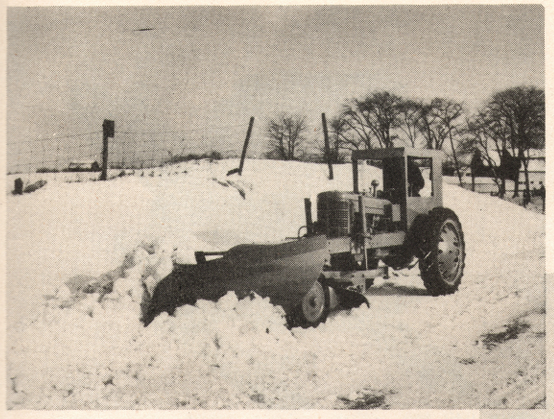
Other effective uses for Hydreco





ABOVE LEFT: Hydreco TV-17-B Tank and Valve Unit installation on Blaw-Knox Paving Finisher.

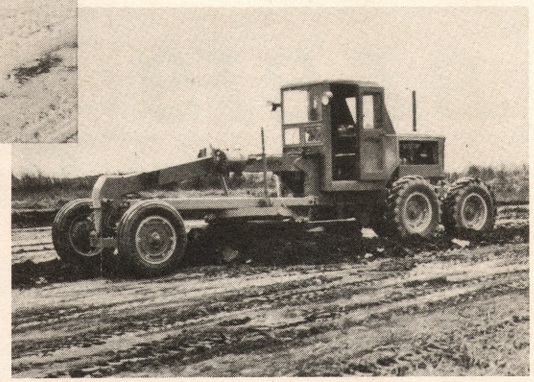
RIGHT: A dramatic shot of Towmotor lift truck at work in paper mill.

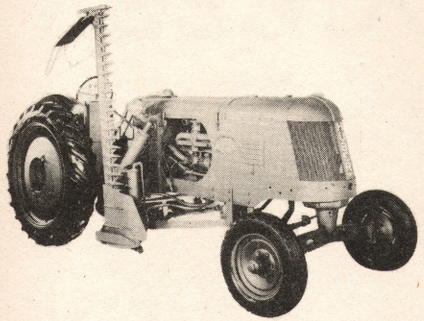


LEFT: Trojan Speed Patrol keeps rural roads open.

INSET (Below Left): Huber Maintainer fitted out as a highway mower.

BELOW: Warco Grader in action. Adverse weather and mud are all in the day's work for this rugged unit.



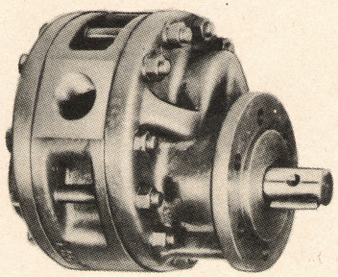


systems are in logging and lumbering equipment, coal mining machinery and oil derrick and core drilling devices. To round out the list we must mention concrete block forming devices, heat-treating furnace applications, post hole diggers and special machine tool applications.

The work that is accomplished by the aforementioned machinery and equipment is in some measure the work of Hydraulic Equipment Company. Remote as it may seem from our tasks here at the plant, this work, so greatly needed in a war-torn, exhausted and depleted world, is our main contribution to the economy of which we are all a part and which maintains us as individuals.

RIGHT: Warner and Swasey Gradall digs and finishes an excavation. Hydraulics play a very important part in this many-purpose machine.

In oil hydraulic systems — composed of a complete line of job-engineered hydraulic devices — Hydreco finds a

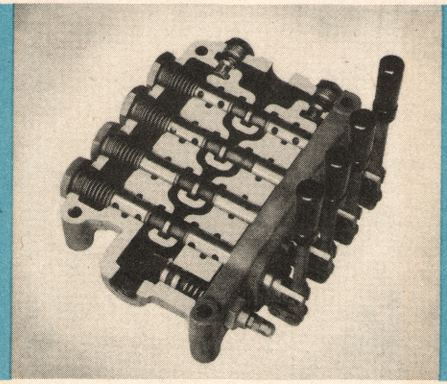


PUMP

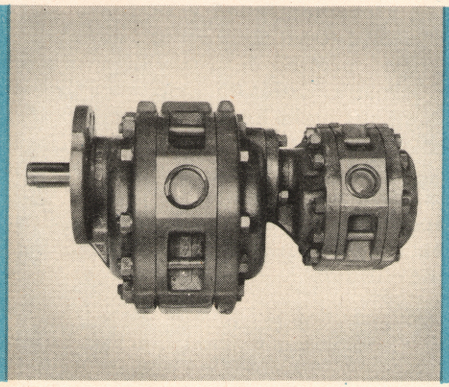
BASIS for SUCCESS

The pump is the fundamental unit of the Hydreco Hydraulic System, for it is in the pump that power from an outside source is admitted to the system and transformed into pressure and flow. It is important that this transformation from torque power to hydraulic power be accomplished with as little loss of energy as possible. The Hydreco pump provides a long-lived dependable source of hydraulic power operating at normal speeds and high pressures. Having special features such as roller type bearings on both drive and driven shafts, the pump is a spur geared pressure generator built from carefully selected materials to give trouble free service and to withstand heavy shock loads. Either foot or flange mountings are available. Capacities range from one-half gallon per minute up to 130 gallons per minute. Hydreco pumps are unexcelled as a low cost continuous duty hydraulic power unit.

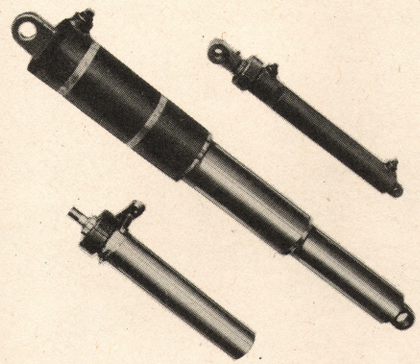
Hydreco valves are the means by which the hydraulic system can be controlled and regulated. They fall into two basic classifications, control valves and auxiliary valves. Control valves are used by the operator to directly control the action of the hydraulic cylinders. Auxiliary valves, such as relief, check and unloading valves, are automatic in their action and serve



OPERATING VALVE
(Cutaway view showing plungers)



TANDEM PUMP



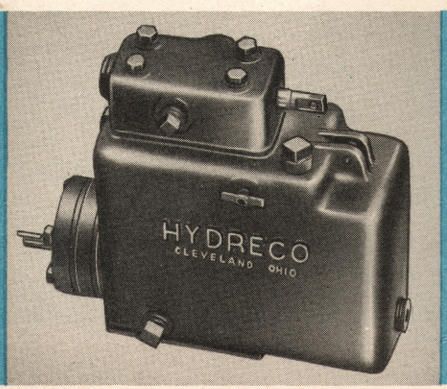
CYLINDERS

to protect the system from excessive pressures and to provide special patterns of flow in certain installations. Attributes such as low original cost, long life at high accuracy, patented design features and easy operation make Hydreco valves the recognized leaders in their field.

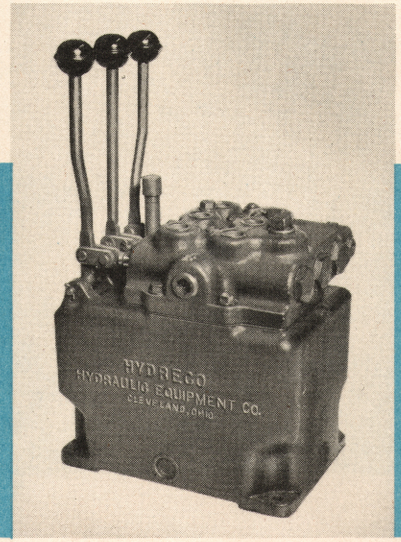
Hydreco hydraulic cylinders are made to fit the customer's specifications down to the last detail. A large stock of materials and components always on hand, up to the limit of our suppliers' ability to deliver, assures rapid delivery of prescription-made cylinders to our customers. Factors such as weight to be lifted or moved, length of stroke required, speed desired, as well as space requirements and mounting means are considerations that influence the design of every cylinder. Hydreco's attention to these details assures customer satisfaction and good performance of Hydreco Systems on the job.

Combination hydraulic units cut down installation time, often effect savings in space. Combined with low first cost, these characteristics are making Hydreco P.V.T.s, T.V.s and P.V.s more popular than ever before. (P for pump, T for tank and V for valve.)

An almost infinite number of variations, combinations and sizes of the basic units outlined above enables Hydraulic Equipment Company to tackle any hydraulic problem with the assurance of success. Against a background like this, and with consideration and care, Hydreco is certain to go forward.



P. V. T.



T. V.

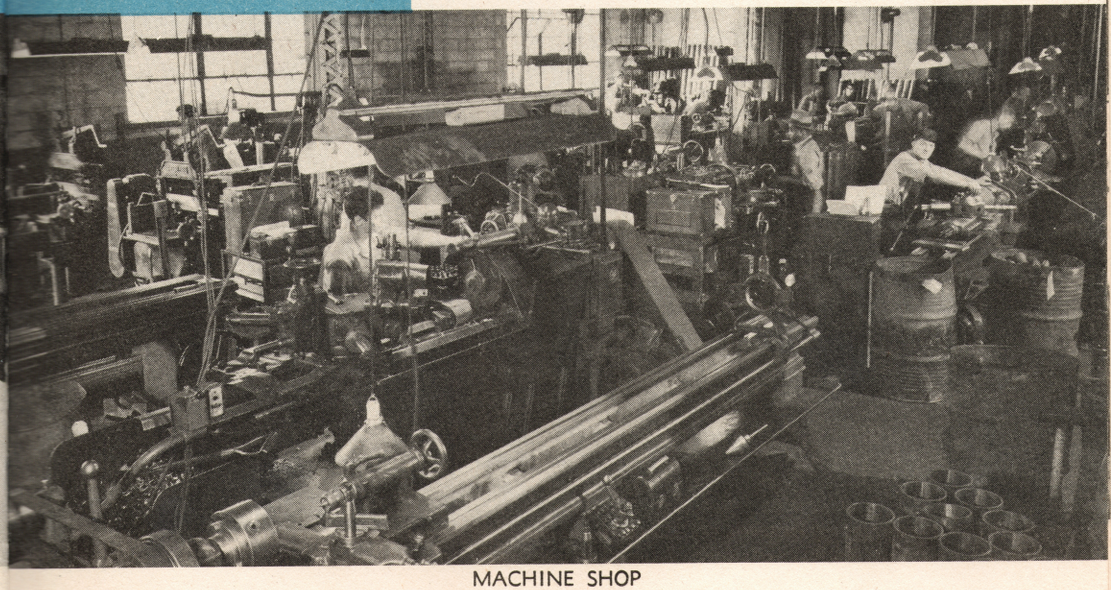
ENGINEERING DEPARTMENT

From MIND to MACHINE

MACHINE SHOP

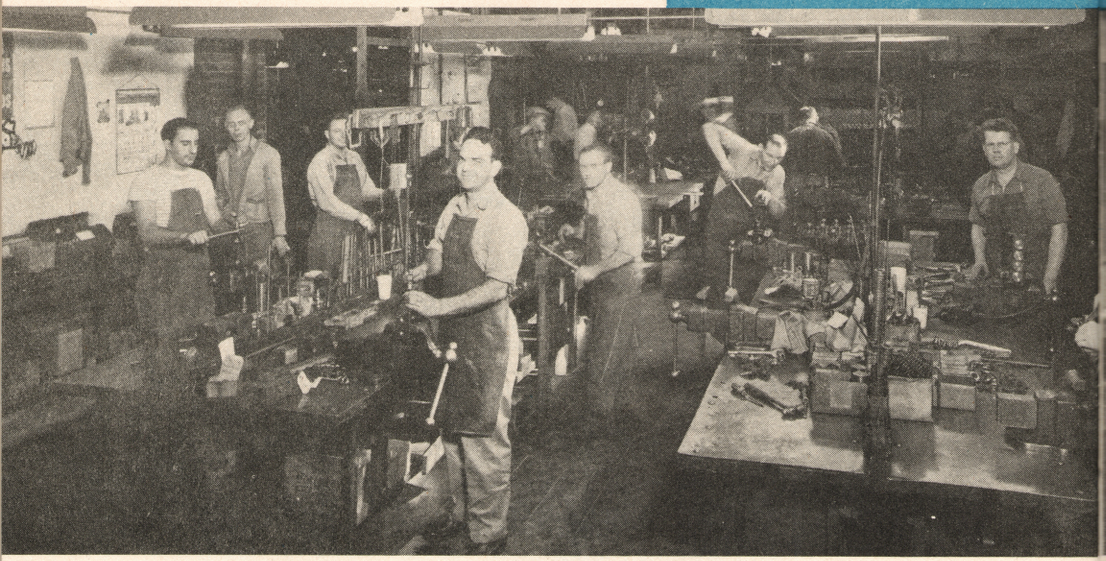
— power that flows —

PRODUCTION CONTROL DEPARTMENT



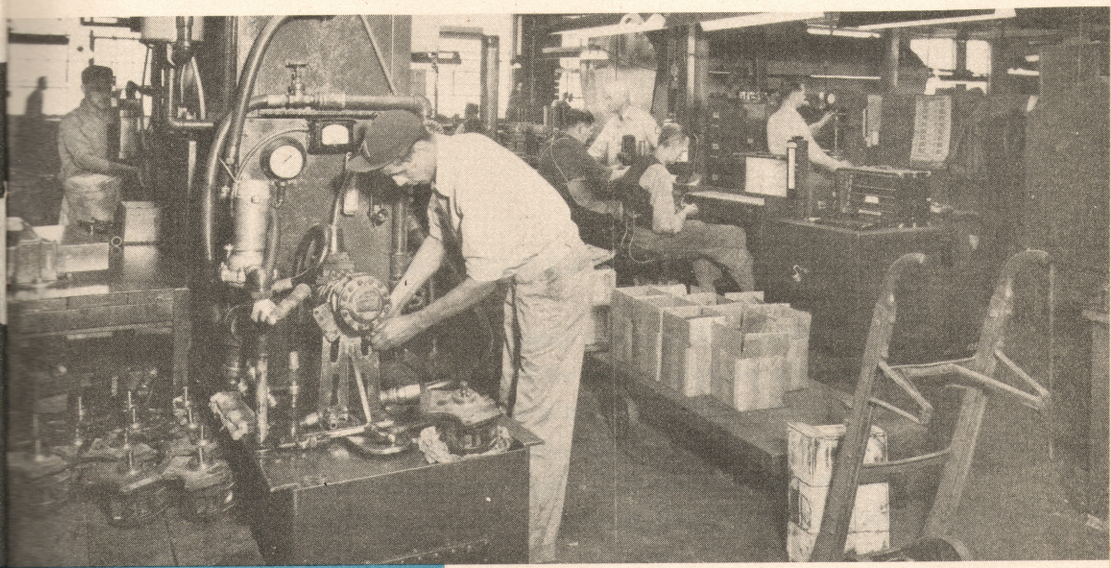
MACHINE SHOP

A CORNER OF THE STOCK ROOM



PUMP AND VALVE ASSEMBLY, NORTH SIDE

From STORE ROOM to SHIPPING DOCK



A VIEW OF THE INSPECTION DEPARTMENT

SHIPPING DEPARTMENT

ACKNOWLEDGMENTS

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Our thanks also to all those who submitted pictures and data which we were unable to use solely because of the limited space available.